

The Echinoderms Newsletter¹

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In the last newsletter we solicited your comments concerning the future of the newsletter, and asked you to suggest changes, additions, deletion etc. We found that those who responded to this request noted that the Newsletter was useful essentially in its present form, and should be continued. We were encouraged to issue it on a more regular basis.

We have not included a revised address list with this issue; we plan to do so during August or September, if all goes well. We now have an automatically printed labeling system, so that should save a considerable amount of time. We would like to propose at the Echinoderms Conference in Rovinj, Yugoslavia that somebody else take over production of the newsletter. One or two people have volunteered to assist with this, and we would like to encourage others to do so. Our other commitments invariably result in delays in preparation and printing, and somehow we never get around to issuing it on time. Certainly it is a matter to be discussed seriously in Yugoslavia.

David L. Pawson
Maureen E. Downey

¹The Echinoderms Newsletter is not intended to be part of the scientific literature, and should not be cited, abstracted, or reprinted as a published document.

SUGGESTIONS AND REQUESTS

- A.N. BAKER would like to learn of any spare volumes of Mortensen's monograph of the echinoids.
- I. FERBER would like to have information on irregular echinoids (particularly Spatangoida) observed in situ: distribution, habitats, burrowing behavior, depth and rate of burrowing, sediment type, population density, size, data, etc. She would also like to have references to unpublished studies on biology and ecology of irregular sea urchins
- J.D. GREEN would like to hear from those who are working on holothurian systematics, reproductive biology and ultrastructure, especially other graduate students whose work has not yet appeared in the literature.
- H.K. HESS is looking for a slab with several specimens of Uintacrinus socialis (as complete as possible) and offers in exchange either slabs with Chariocrinus andreae or Pentacrinites dargnicsi (Middle Jurassic crinoids) or specimen(s) of Pelanodiadema oolithicum (complete, with lantern), a Middle Jurassic echinothurioid.
- F.H.C. HOTCHKISS would like to receive alcohol preserved starfish with more or fewer arms than normal, for dissection and study. He is also interested in obtaining series of the genus Astropecten as comparative material for a revision of the genus.
- A.J. JORDAN would like to examine scanning electron micrographs of echinoid plates, both surface and broken edge views.
- P.M. KIER would like to study Triassic echinoids from anywhere in the world.
- C. KROPACH requests information on Indian Ocean echinoderms, Acanthaster planci studies and status world-wide.
- J.S. LUCAS would like to know of any data on, or references to, hybridization in asteroids (apart from Gemmill, 1912).
- S.S. MACZYNSKA would like to have specimens of any species of holasteroid from the Cretaceous.
- K. MARKEL would like to study lanterns of echinothuriid echinoids.
- A. MIRONOV would like to study recent sea urchins of the suborder Meridosternina from anywhere in the world.
- C. OGURO would like to receive preserved specimens of asteroids (especially Luidiidae, Astropectinidae and Asteroiidae) for comparative anatomy and systematic study. Exchange of specimens will be welcomed.
- C.R.C. PAUL would like to have records or specimens of Ordovician echinoderm fragments (particularly cup plates) from anywhere in the world, but especially South America, for work on Ordovician faunal provinces.
- D.L. PAWSON would like to contact anybody who has information on swimming activities of holothurians, beyond that which has appeared in the published literature.

F.W.E. ROWE would like to receive information and the loan of specimens of the asteroid genera Nardoa, Gomophia and Asterodiscus. He would also like to have records of Tasmanian echinoderms from other institutions. He has tentatively proposed that a symposium on echinoderms be held in Sydney, Australia around January-February 1977.

Y. SCHLESINGER would like to have information on dense populations of holothurians, their sexual behavior, spawning, larval development, as well as on occurrence of holothurians near ports and the effect of phosphates upon them.

P.M. SIEGEL would like to have references and/or reprints of papers covering any aspect of the biology and distribution of the holothurian Chiridota laevis in particular, and chiridotid holothurians in general.

H.L. STRIMPLE would like answers to the following questions concerning ontogeny of modern comatulid crinoids:

1. In the "cystid" stage, do the orals remain open all of time or do they withdraw their podia or tentacles and close their orals on occasion?
2. What is the position of the anus and the rectum in the "cystid" stage.
3. Is there a hydropore penetrating the posterior oral and connected to a stone canal in the "cystid" stage? He thinks not, but needs to ask to be certain.

TASMANIAN MUSEUM, G.P.O. Box 1164M, Hobart 7001, Tasmania, Australia, would like to purchase a copy of H.L. Clark's (1946) paper "The echinoderm fauna of Australia". Please contact Miss Alison Green, Curator of Invertebrate Zoology at the Tasmanian Museum if you have a spare copy of the paper.

Current Research Projects

- ATWOOD - Ultrastructural investigation of spermatogenesis and spermatozoa morphology in holothurians.
- AUNG - Growth and delay of metamorphosis of the larvae of Arachnoides placenta.
- BAKER - Revision of Australasian euryalid ophiuroids; echinoderms of Kermadec and Niue Islands.
- BIRKELAND - Ecology of Puget Sound asteroids; predation on the holothurian Cucumaria lubrica by 7 species of asteroids and stabilization of the system by the top predator Solaster dawsoni; distribution and changes in abundance with time of echinoderms on the Caribbean and Pacific coasts of Panama.
- BLAKE, D.B. - Relationships among seastar families.
- BOCKELIE - Ontogenetic and variability studies and morphology of cystoids.
- BRANSTRATOR - Systematics and functional anatomy of Ordovician asteroids; taxonomy of Middle Ordovician asteroids from Utah, Nevada, and California; early post-larval development and ecology of modern asteroids; recruitment in rocky shore littoral asteroids.
- BRITO - Albian echinoids of Brazil; Miocene echinoids of North Brazil.
- BROWER - Silurian crinoids from Scotland; the Carboniferous crinoid genus Woodocrinus; Middle Ordovician crinoids from the Twin Cities area, Minn.
- BRUN - Predation by starfish (Asterias) on a scallop bed; taxonomy of genus Henricia (North Atlantic).
- BRUNEL - Distribution of invertebrate benthic communities and major taxa in the Lower St. Lawrence Estuary as related to depth, temperature stratification and sediments.
- CAMPBELL - Behaviour and ecology of tropical asteroids; coordination of echinoid test appendages.
- CARNEY - Animal-sediment relationships: holothurian feeding in the deep sea; holothurian fauna of the Eastern Pacific.
- CASO-MUNOZ - Continuing work on a monograph of the echinoderms of Mexico; morphology and ecology of Tripneustes; internal morphology of Platasterias latiradiata; description of a new species of Mithrodia, and work on the genus Mithrodia.
- CHERBONNIER - Echinoderm fauna of Madagascar; echinoderms of Kergulen; echinoderm fauna of Europe; echinoderms of Gulf of Guinea.
- CLARK, A.M. - Echinoderm fauna of southern Africa; Australian crinoids.
- COBB - Neurotransmission in invertebrates.
- CRAPP - Age determination in the sea urchin Paracentrotus lividus.
- DAYTON - Nearshore community ecology.

- DERSTLER - Camptostroma; Stylophora carpoids; Cambrian carpoids
- DEVANEY - Shallow water ophiuroids of the Indian Ocean - systematics, zoogeography.
- DUBOIS - Variations of the echinoderm fauna on a coral reef with an adjacent non-coral outcrop.
- EBERT - Investigation of techniques to estimate growth and mortality rates; patterns of growth and mortality rates in echinoderms.
- ELLINGTON - Carbohydrate metabolism in the pyloric caeca of the seastar Asterias forbesi; aspects of the physiological ecology of Thyone briareus, with particular emphasis on mechanisms involved in facultative anaerobiosis.
- ENGEL - Fossil echinoids of Maastricht.
- ERNEST - Natural history of Lytechinus variegatus in the Tarpon Springs area with special regard to thermal pollution; echinoderms of Tampa Bay, Florida.
- ERNST - Phylogeny, biostratigraphy, ecology, ecomorphology and systematics of Cretaceous and Tertiary echinoids of northwest and western Europe; actinopterygology of Mediterranean echinoids.
- FENAU - Biology of echinoderms.
- FERBER - Biology and ecology of Spatangoida in the Red Sea.
- FERGUSON - Starfish nutrition.
- FISHELSON - Changes in echino-fauna in polluted and non-polluted subtidal of northern Red Sea.
- FOSTER - Australian and New Zealand Tertiary holasterids.
- FRANZEN - Crinoid holdfasts; ecology of Silurian crinoids from Gotland, Sweden.
- FREST - Revision of the Caryocrinitidae; description of several new inadunate and camerate crinoids from the Middle and Upper Silurian, North American Continental Interior; Cyclocystoides from the Upper Silurian of Indiana; Stephanocrinus and related coronate crinoids (with C.R.C. Paul); phylogeny of the Calceocrinidae.
- GIESE - Physiology of the echinoid and asteroid body wall.
- GOLDBERG - Biologically active compounds from sea urchins.
- GREEN - Seasonal reproduction in Leptosynapta tenuis.
- HAGSTROM - Development of sea urchin larvae.
- HAUGH - Nervous and muscle systems in Upper Paleozoic Camerate crinoids.

- HAWKINS - Feeding energetics and formulation of an energy budget for the tropical sea urchin Diadema antillarum.
- HENDERSON - Australasian Cenozoic Echinoidea.
- HESS - Ophiuroid ossicles from Middle and Upper Oxfordian of Jura Mountains.
- HIMMELMAN - Reproductive periodicity of Strongylocentrotus drobachiensis and the possible importance of phytoplankton as a spawning trigger.
- HOSHIAI - Marine benthos ecology in the coastal area of Antarctica.
- HOSKIN - Trehalose in snail serum; EM of host parasite interface of snail and larval trematode.
- HOTCHKISS - Paleozoic ophiuroid studies; working up the International Indian Ocean Expedition starfish; a collection of starfish from the Gulf of Panama; ecology of starfish and brittlestars at Carrie Bow Cay, British Honduras; asymmetry in starfish and homology of echinoderm arms.
- IRIMURA - Ophiuroid fauna in Sagami Bay.
- JEFFRIES - Echinoderm-chordate connections
- JORDAN - Echinoid skeletal morphology.
- KANATANI - Mechanism of oocyte maturation and spawning in echinoderms.
- KAZUHIRO - Ecological study on the planktonic larvae and settled juveniles of the sea urchins Strongylocentrotus intermedius and S. nudus.
- KELLER - Continuing studies of Jamaican echinoids; population dynamics.
- KIER - Triassic echinoids; a study of the echinoids off British Honduras; a revision of Lambert and Thiery.
- KOLATA - Functional morphology of cyclocystoids; study of crinoids from the Upper Ordovician Bighorn Formation of Wyoming.
- KOMATSU - Reproduction and development of seastars; analysis of wrinkled blastula formation in Asteroidea.
- KRISHNAN - Reproductive and nutritional physiology of Cucumaria frondosa.
- KROPACH - Acanthaster planci in the Gulf of Elat.
- LANE - The anal sac of Aesiocrinus magnificus; the feeding biology of Paleozoic crinoids and modern basketstars (with Meyer).
- LAWRENCE - Biology of Luidia.
- LEWIS - Behaviour of Echinus osculentus following scaling or extirpation of the madreporite.

- LOBATSCHEVA - Early Cretaceous echinoids of Middle Asia; systematics and phylogeny of spatangids and their stratigraphic significance.
- LUCAS - Factors influencing the early developmental stages of Acanthaster planci.
- LÜTZEN - Studies on associates (mainly gastropods) of echinoderms.
- MACZYNSKA - Cretaceous echinoids of Poland - Holasteroidea Upper Cretaceous.
- MAJOR - Osmotic stress in Cucumaria frondosa.
- MARCUS - Genetic divergence of several populations of Arbacia punctulata.
- MARKEL - Echinoid teeth and skeletons.
- MARSH - Taxonomy of some Indo-Pacific Asteroidea; Acanthaster planci in Western Australian Asteroidea.
- MACURDA - Zoogeography of Caribbean crinoids (with D. Meyer); evolution and distribution of the blastoid Pentremites (with A.L. Horowitz).
- MEYER - Zoogeography and morphology of Caribbean crinoids (with Macurda); feeding biology of some Paleozoic crinoids and recent basketstars (with Lane); biological and physical monitoring, Atlantic and Pacific Panama.
- MILEIKOVSKY - Formulation of some ecological rules and regulations describing the distribution of the pelagic larvae of marine bottom invertebrates in the plankton of the World Ocean in connection with the distributional patterns of parental benthic species and communities.
- MINKOFF - Crystal growth.
- MIRONOV - Morphology, phylogeny, biology and distribution of the recent sea urchins of the suborder Meriodosternina; Distribution of the deep-sea urchins.
- MITROVIC - Mesozoic Echinoidea.
- MUSCAT - Population dynamics of ophiuroids.
- NATAF - Systematics of asteroids; tegument of asteroids.
- NICHOLS - Hydrodynamics of the water-vascular system.
- NIESEN - Population biology of brooding asteroids; thermal enhancement of digestion intertidal echinoderms.
- O'BRIEN - Feeding and reproductive behavior of Leptasterias littoralis and Leptasterias tenax in New England waters.
- O'CONNOR - Synecological survey of echinoderms in Galway Bay with in situ behavioural studies on ophiuroid communities.
- OGURO - Development and systematics of asteroids.
- PABIAN - Missourian and Virgilian (Pennsylvanian) crinoids.

- PAINE - Spatial structure of intertidal communities; the structure of food webs; the ecological role of Pisaster ochraceus.
- PATENT - Histology and ultrastructure of ophiuroid gonads.
- PAUL - British and Scandinavian Ordovician echinoderms; revision of Sphaerocrinoids.
- PEARSE - Kelp forest ecology; functional anatomy of the echinoid aboral ring complex.
- PENTREATH - Neurotransmission in invertebrates.
- PETERSEN - Physiological and ecological aspects of gas exchange in echinoderms; effect of temperature and/or salinity on the development and survival of echinoids.
- PROKOP - Family Synbathocrinidae from the Devonian of Bohemia; the genus Ichthyocrinus in the Lower Devonian of Bohemia.
- REGIS - Study of the test of echinoids of the Mediterranean.
- ROBISON - Middle Cambrian biostratigraphy of the Breat Basin.
- ROWE - Revision of Nardoa, Gomophia, Asterodiscus; revision of Hacelia (with Loiset Marsh); Australian holothurians; Tasmanian echinoderms.
- SALAZAR - Phototaxis in sea urchins; byssal thread production as a toxicity test; environmental impact of dredge spoils.
- SALVAT - Echinoderms (other than holothurians and crinoids) recently collected by a Polish expedition in South Atlantic waters; induction of spawning and larval development of Patiria stellifer; population and reproductive biology of a brooding starfish, Anasterias minuta.
- SASTRY - Systematics, taxonomy, zoogeography of Echinoidea.
- SATO - Mechanism of cell division; crystallization, stabilization and characterization of mitotic spindle protein; primitive motile system and the role of microfilaments.
- SCHELTEMA - Larval dispersal among echinoderms.
- SCURRY - Biometrical analysis of the Mesozoic cassiduloid Nucleolites.
- SERAFY - Description of the first extant species of Pisolampas; zoogeography of North Atlantic echinoids; echinoids of the northeastern United States shelf; a new species of Caenopedina from the South Atlantic; benthic ecology of invertebrate communities in Long Island Sound.
- SEVASTOPULO - Irish Carboniferous crinoids; early ontogeny of blastoids.
- SHEPHERD - Effect of echinoids on algal populations.
- SHIRAI - Mechanism of oocyte maturation and spawning in echinoderms.

- SHLESINGER - Ecology and biology of two species of Holothurians, Actinopyga sp. and Ophcodesoma sp., and the influence of chemical pollution on their distribution.
- SIBUET - Abyssal echinoderms collected by the Jean Charcot Expedition.
- SIEGEL - Ecology, distribution and regeneration of the apodous holothurian Chiridota laevis.
- SLOAN - Predatory behaviour of the sunstar Crossaster.
- SOLOVJEV - Morphology, systematics, and evolution of Upper Cretaceous and early Paleogene spatangoid echinoids.
- SPRINKLE - Cambrian echinoderms of the Rocky Mountains; late Cambrian echinoderms from the Davis Formation of SE Missouri; coordinator of major new project on the echinoderm faunas of the Bromide Formation (Middle Ordovician) of S. Oklahoma.
- STEELE - Ecology of shallow water organisms.
- STRATHMANN - Limitations on performance of ciliary clearance mechanisms of echinoderm larvae and similar suspension feeders; advantages of spreading offspring; limitations on branching of ambulacra.
- STOKES - Jurassic echinoids from Western Thailand; modern echinoids from the Gulf of Thailand.
- STUKALINA - Taxonomy and phylogeny of Paleozoic crinoids; systematics of ancient echinoderms.
- SUTTON - Benthic ophiuroid assemblages in Monterey Bay, California; collation and organization of invertebrate reference collection for San Francisco Bay Delta Region.
- TAKAHASHI - Echinoid spine mechanism; connective tissue catch in echinoderms.
- TERMIER - Precambrian-Cambrian fossils.
- THOMAS - Ophiuroids of the continental slope; ophiuroids of the genus Ophioplocus; Western Atlantic ophiurids.
- TOMMASI - Echinoderms from southern Brazil; ophiuroids from sub-Antarctic and Antarctic regions.
- TORTONESE - Distribution and biology of the Mediterranean Echinoderms (except holothurians).
- TYLER - Ecology and reproductive biology of Ophiura in Bristol Channel.
- UBAGHS - Carpod echinoderms from Bohemia.
- VADAR - Development of sea urchin larvae.
- WALKER - Morphology, histology, and ultrastructure of the reproductive systems of 5 species of asteroids.

- WARNER - Feeding in brittlestars, genus *Ophiothrix*.
- WEBER, J. - Temperature dependence of 180 incorporation into skeletal calcites deposited by echinoderms; replication of skeletal microstructures of echinoderms into polymer, metal, and ceramic biomaterials for prosthetic applications.
- WEBER, W. - Color change of *Centrostephanus longispinus*; electron microscopic investigations on the basiepithelial nerve net of *Centrostephanus longispinus*.
- WEBSTER - Permian crinoids from Callythera Springs, Australia; Late Pennsylvanian crinoids from Arrow Canyon, Nevada.
- WILKIE - Mechanism of autotomy of ophiuroid arms.
- WILLIS - Population biology of *Paracentrotus lividus* with regard to its usefulness as a base line indicator of pollution and with special reference to a local commercial fishery.
- YAMAGUCHI - Early life histories of coral reef asteroids.

Theses dealing with echinoderms

Compiled by J.M. Lawrence

M.A. theses

- Adair, W.S. 1972. Effects of temperature on fertilization in the purple sea urchin Strongylocentrotus purpuratus (Stimpson). California State University, San Diego.
- Allison, C. 1963. Revision of the echinoderm family Mellitidae. Univ. of California, Berkeley.
- Atwood, D.G. 1972. Histological and physiological analysis of neurosecretory substances in Spinulosida and Platyasterida (Echinodermata: Asteroidea). Univ. of South Florida.
- Baker, S.L. 1973. Growth of the red sea urchin Strongylocentrotus franciscanus (Agassiz) in two natural habitats. California State Univ., San Diego.
- Davis, H.S. 1971. The gonad wall of Echinodermata; a comparative study based on electron microscopy. Univ. of California, San Diego.
- Dehn, P.F. 1974. A preliminary study of the rhythmicity and feeding behavior of the sea star Luidia clathrata Say (Echinodermata: Platyasteroidea) from Tampa Bay and Sea Horse Reef, Cedar Key, Florida. DePauw Univ.
- Doran, G. 1968. Ecology of Echinometra lucunter (Linnaeus). McGill Univ.
- Ellington, W.R. 1973. Seasonal temperature characteristics of cytoplasmic malic dehydrogenase in the gut of Mellita quinquiesperforata (Echinoidea: Clypeasteroidea) Univ. South Florida.
- Everingham, J.W. 1961. The intraovarian embryology of Leptosynapta clarki Univ. of Washington.
- Ferber, I. 1973. Contributions to the biology of Lovenia elongata (Gray) Echinodea: Spatangoida) in the Gulf of Elat, Red Sea. The Hebrew Univ. of Jerusalem.
- Himmelman, J.H. 1969. Some aspects of the ecology of Strongylocentrotus droebachiensis in eastern Newfoundland. Memorial Univ. of Newfoundland.
- Imlay, M.J. 1964. Microscopic observations of gamete shedding substance in starfish radial nerve. The American Univ.
- Irvine, G.V. 1973. The effect of selective feeding by two species of sea urchins on the structuring of algal communities. Univ. of Washington.
- Jones, S.A. 1960. The early embryology of Psolus chitonoides Clark. Univ. of Washington.
- Lees, D.C. 1970. The relationship between movement and available food in the sea urchins Strongylocentrotus franciscanus and Strongylocentrotus purpuratus. California State Univ., San Diego.

- Lowe, E.F. 1974. Absorption efficiencies, feeding rates and food preferences of Lytechinus variegatus (Echinodermata: Echinoidea) for various marine plants. Univ. of South Florida.
- Mitchell, B.P. 1972. Rediscovery of Gregory's diverticulum in the scutellid sand dollars. Western Washington State College.
- Niessen, T.M. 1968. Population structure, dynamics, breeding cycles and ecotypic variation in San Diego populations of the sand dollar Dendraster excentricus (Eschscholtz). Calif. State Univ., San Diego.
- Polls, I. 1970. Behavioral aspects of righting in the asteroid echinoderms Henricia leviuscula (Stimpson) and Leptasterias aequalis (Stimpson) Oregon State Univ.
- Prim, P.P. 1973. Utilization of marine plants and their constituents by enteric bacteria of echinoids (Echinodermata). Univ. of South Florida.
- Stancyk, S.E. 1970. Studies on the biology and ecology of ophiuroids at Cedar Key, Florida. Univ. of Florida.
- Ulbricht, R.J. 1970. Oxygen consumption of three species of sea urchins at different temperatures. Oregon State
- Zinn, D.J. 1937. The growth and development of starfish in Narragansett Bay in relation to temperature and food supply. Rhode Island State College.
- Ph.D. dissertations
- Alexander, R.R. 1972. Autoecological studies of the brachiopod Rafinesquina (Upper Ordovician), the bivalve Anodora (Pliocene), and the echinoid Dendraster (Pliocene). Indiana Univ.
- Bell, B. McC. 1972. A study of North American Edrioasteroidea. Univ. Cincinnati.
- Boylan, E.S. 1972. Aspects of gene activity during oogenesis in the amphibian Xenopus laevis, and the starfish, Asterias forbesi. Cornell Univ.
- Cayer, M.L. 1973. Ciliogenesis in sea urchin embryos. Univ. of Miami.
- Chang, C.W.J. 1964. Structure and function of spinochrome H. Univ. of Hawaii.
- Chartock, M.A. 1972. The role of detritus in a tropical marine ecosystem: niche separation in congeneric ophiuroids, food partitioning in cryptic invertebrates, and herbivore detritus production at Eniwetok, Marshall Islands, Univ. Southern California.
- Chatlynn, L.G. 1972. An ultra-structural study of oogenesis in the sea urchin Strongylocentrotus purpuratus. Oregon State Univ.
- Conway, C.M. 1972. Characterization of the heavy bodies of the sea urchin egg. Univ. of Miami.

Ph.D. dissertations

- Craig, III., S.P. 1970. Mitochondria and the development of sea urchin embryos. California Institute of Technology.
- Dayton, III, P.K. 1971. Competition, predation, and community structure: the allocation and subsequent utilization of space in a rocky intertidal community. Univ. of Washington. (includes Pisaster, Pycnopodia and Strongylocentrotus).
- Dearborn, J.H. 1965. Ecological and faunistic investigations of the marine benthos at McMurdo Sound, Antarctica. Stanford Univ. (includes crinoids, asteroids, ophiuroids and echinoids).
- Dixit, D.B. 1973. Uptake of amino acids and development in the sea urchin. Univ. of California, Irvine.
- Eastwood, J.L.J. 1972. The development of photic behavior of Lytechinus variegatus echinoplutei larvae. Lehigh Univ.
- Ellis, Jr., C.H. 1966. Genetic control of sea urchin development: a chromatographic analysis of protein synthesis in the Arbacia punctulata embryo. The Johns Hopkins Univ.
- Gentleman, S.B. 1971. Respiratory studies of a sea cucumber. Duke Univ.
- Halpern, J.A. 1970. A monographic revision of the goniasterid sea stars of North Atlantic. Univ. of Miami.
- Hathaway, R.R. 1961. Studies on interactions between spermatozoa and eggs of Arbacia punctulata and other echinoderms. Florida State Univ.
- Hendler, G.L. 1973. Northwest Atlantic amphipod brittlestars, Amphipplus abditus (Verrill), Amphipplus macilentus (Verrill) and Amphipplus sepultus n. sp. (Ophiuroidea: Echinodermata): systematics, zoogeography, annual periodicities, and larval adaptations. Univ. of Connecticut.
- Hinegardner, R. T. 1961. Studies on the sea urchin egg nucleus: its isolation, structure, physical properties and DNA content. Univ. of Hawaii.
- Jordan, A.J. 1972. On the ecology and behavior of Cucumaria frondosa (Echinodermata: Holothuroidea) at Lamoine Beach, Maine. Univ. of Maine.
- Kelso, D.P. 1970. A comparative morphological and ecological study of two species of the sea urchin Echinometra in Hawaii. Univ. of Hawaii.
- Landenberger, D.E. 1967. A study of predation and predatory behavior in the Pacific starfish, Pisaster. Univ. of California, Santa Barbara.
- McLean, R.F. 1962. Mechanical and biological erosion of beachrock in Barbados, West Indies. McGill Univ. (includes Echinometra)
- Modes, G. 1917. A study of the causes and the extent of variations in the larvae of Arbacia punctulata. Bryn Mawr.

Ph.D. dissertations

- Mangan, J. 1966. Early sea urchin development: constant and changing features of ultrastructure and protein synthesis. Brown Univ.
- Menge, B.A. 1970. The population ecology and community role of the predacious asteroid Leptasterias hexactis (Stimpson) Univ. of Washington.
- Meyer, D.L. 1971. Functional morphology and autecology of shallow-water unstalked crinoids (Echinodermata) of the Caribbean Sea. Yale Univ.
- Mintz, L.W. 1966. The origin, phylogeny, descendants of the echinoid family Disasteridae A. Gras 1848. Univ. Calif., Berkeley.
- Nace, III., A.G. 1971. The digestive system and lantern complex of Thyonella gemmata (Pourtales): structure and regeneration. Florida State Univ.
- Nichols, F.H. 1972. Carbon and energy flow through populations of a numerically dominant macroinvertebrate, Pectinaria californiensis Hartman, in Puget Sound, Washington, with reference to larger, rarer, and coexisting species. Univ. of Washington. (includes Brisaster and Molpadia)
- O'Brien, F.X. 1972. Some aspects of the biology of a brooding starfish, Leptasterias littoralis (Stimpson) 1853. Univ. of New Hampshire.
- Onuf, C.P. 1972. Aspects of the population biology of the intertidal snail Olivella biplicata: distribution, nutrition, and effects of natural enemies. Univ. of California, Santa Barbara. (includes Astropecten)
- Piatigorsky, J.P. 1967. Studies on nucleosides and amino acid uptake and on RNA and protein synthesis by growing oocytes, unfertilized and fertilized sea urchin eggs. California Institute of Technology.
- Percy, J.A. 1971. Thermal acclimatization and acclimation in the echinoid Strongylocentrotus droebachiensis (O.F. Müller, 1776). Memorial Univ. of Newfoundland.
- Singletary, R.L. 1971. The biology and ecology of Amphioplus conifortodes Ophionephthys limicola, and Micropholis gracillima (Ophiuroidea: Amphiuridae). Univ. of Miami.
- Smith, Jr., G.N. 1971. Regeneration in the apodous holothurian Leptosynapta crassipatina. Florida State Univ.
- Smith, R.H. 1971. Reproductive biology of a brooding sea-star Leptasterias pusilla (Fisher) in the Monterey Bay region. Stanford Univ.
- Stevens, M.E. 1972. Protein synthesis and respiration during maturation and fertilization in starfish oocytes. Stanford Univ.
- Stewart, W.C. 1970. A study of the nature of the attractant emitted by asteroid hosts of the commensal polychaete, Ophiodromus pugettensis. Univ. of California, Santa Barbara
- Strathman, R.R. 1970. The behavior of planktotrophic echinoderm larvae: mechanisms, regulation, and rate of suspension feeding. Univ. of Washington.

Ph.D. dissertations

Vadas, R.L. 1968. The ecology of Agarum and the kelp bed community. Univ. of Washington. (includes Strongylocentrotus spp.)

Recent Publications and Papers in Press

This list is based upon Newsletter replies plus reprints received. It includes papers published in 1973 or later. Please note that many of the papers listed below as "in press" will already have been published.

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